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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,998	03/19/2004	Bernhard Geiger	32860-000720/US	6914

7590 12/14/2005

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EXAMINER

HO, ALLEN C

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/803,998	GEIGER ET AL.	
	Examiner	Art Unit	
	Allen C. Ho	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Paragraph [0035], lines 1-2, "increasing focusing" should be replaced by --increased defocusing--.

Appropriate correction is required.

Claim Objections

2. Claims 1-9 and 20-26 are objected to because of the following informalities:

- (1) Claim 1 recites the limitation "signals" in lines 12 and 13. There is insufficient antecedent basis for this limitation in the claim. It is unclear what is the origin of the signals.

- (2) Claims 2, 3, and 7 recite the limitation "the gain factors". There is insufficient antecedent basis for this limitation in the claim. Furthermore, there is no connection between the gain factors and the amplification in claim 1.

Appropriate correction is required.

3. Claims 10-19, 27, and 28 are objected to because of the following informalities:

- (1) Claim 10 recites the limitation "the signals" in lines 7 and 18. There is insufficient antecedent basis for this limitation in the claim. It is unclear what is the origin of the signals.

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(2) Claim 10 recites the limitation "the focus" in line 20. There is insufficient antecedent basis for this limitation in the claim.

(2) Claims 11-13 recite the limitation "the gain factors". There is insufficient antecedent basis for this limitation in the claim. Furthermore, there is no connection between the gain factors and the amplification in claim 10.

Appropriate correction is required.

4. Claim 29 is objected to because of the following informalities:

(1) Line 3, "to an" should be replaced by --from a radiation-- to better correspond to the radiation image receiver recited in line 13.

(2) Line 5, --a source-- should be inserted between "of" and "a beam".

(3) Line 10, "a" should be replaced by --the--.

Appropriate correction is required.

5. Claim 30 is objected to because of the following informalities:

(1) Claim 30 recites the limitation "the signals" in lines 7 and 18. There is insufficient antecedent basis for this limitation in the claim. It is unclear what is the origin of the signals.

(2) Claim 30 recites the limitation "the focus" in line 20. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Allowable Subject Matter

6. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claims 1-9 and 20-26, the prior art fails to teach or fairly suggest a method for the compensation of image disturbances in the course of radiation image recording caused by defocusing of an antiscatter grid arranged in the beam path between a beam source and a digital radiation image receiver and focused with respect to a specific distance from a focus of the beam source, the image disturbance being caused by a defocusing-dictated attenuation of primary radiation incident on the radiation image receiver, an image detector including radiation-sensitive pixels arranged in matrix form and a device for pixel-wise amplification of the radiation-dependent signals, the method comprising the step of amplifying at least some of the signals supplied in pixel-wise fashion in a manner dependent on an actual distance of the antiscatter grid from the focus as claimed.

With regard to claims 10-19, 27, and 28, although the prior art discloses an apparatus comprising a beam source, a digital radiation image receiver with radiation-sensitive pixels arranged in matrix form, an antiscatter grid arranged between the beam source and the digital radiation image receiver, it fails to teach or fairly suggest an assigned device for the pixel-wise amplification of at least some of the signals supplied in a manner dependent on the actual distance of the antiscatter grid from the focus as claimed.

With regard to claim 29, the prior art fails to teach or fairly suggest a method comprising the step of amplifying at least some of signals supplied in pixel-wise fashion to an image receiver in a manner dependent on an actual distance of an antiscatter grid from a focus of a beam, and compensating for image disturbances in a radiation image recording based on the amplifying, the image disturbances being caused by defocusing of the antiscatter grid arranged in a beam path and focused with respect to a specific distance from the focus of a source of the beam, and by a

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defocusing-dictated attenuation of primary radiation incident on the radiation image receiver as claimed.

With regard to claim 30, although the prior art discloses an apparatus comprising means for generating a beam, means for detecting the beam including radiation-sensitive pixels arranged in matrix form, and an antiscatter grid arranged between the means for generating a beam and the means for detecting, it fails to teach or fairly suggest means for the pixel-wise amplification of at least some of the signals supplied in a manner dependent on the actual distance of the antiscatter grid from the focus as claimed.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- (1) Baba *et al.* (U. S. Patent No. 6,895,080 B2) disclosed an x-ray measuring apparatus.
- (2) Inoue (U. S. Patent No. 6,826,256 B2) disclosed an apparatus and method for a radiation image through a grid.
- (3) Barnes *et al.* (U. S. Patent No. 6,795,529 B1) disclosed a high ratio, high efficiency general radiography grid system.
- (4) Davis (U. S. Patent No. 6,690,767 B2) disclosed prototile motif for anti-scatter grids.
- (5) Schubert *et al.* (U. S. Patent No. 6,542,575 B1) disclosed a correction method and apparatus for digital x-ray imaging.

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- (6) Ogura *et al.* (U. S. Patent No. 6,502,984 B2) disclosed a radiographic apparatus.
- (7) Kwansnick *et al.* (U. S. Patent No. 6,442,750 B1) disclosed a digital x-ray imager alignment method.
- (8) Conrads *et al.* (U. S. Patent No. 6,246,746 B1) disclosed an x-ray examination apparatus with x-ray image sensor matrix and correction unit.
- (9) Bruijns *et al.* (U. S. Patent No. 5,974,113) disclosed an image pick-up apparatus comprising a correction unit for correcting brightness values.
- (10) Bruijns (U. S. Patent No. 5,434,902) disclosed an imaging system with means for compensating vignetting.
- (11) Honda (U. S. Patent No. 5,050,198) disclosed a method and system for processing x-ray image.
- (12) Strecker (U. S. Patent No. 4,466,113) disclosed an x-ray examination device having a high local resolution.
- (13) York *et al.* (U. S. Patent No. 4,081,687) disclosed a collimator for gamma ray cameras.

8. This application is in condition for allowance except for the formal matters listed above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho
Primary Examiner
Art Unit 2882

11 December 2005